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10/537,330

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Brian Read

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EXAMINER

MILLER HARRIS, AMBER R

ART UNIT

PAPER NUMBER

1797

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DELIVERY MODE

12/10/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/537,330

**Applicant(s)**

READ, BRIAN

**Examiner**

Amber Miller-Harris

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-30 and 37 is/are rejected.
- 7) ☒ Claim(s) 31-36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 06/02/2005
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

Claims 1-20 are cancelled.

### *Specification*

The disclosure is objected to because of the following informalities: "axial shroud 5" (pg 10, lines 18). The object number "5" should be "85".

Appropriate correction is required.

### *Claim Objections*

Claims 22-36 objected to because of the following informalities: dependent on cancelled claims. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 21-30 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Read et al. in view of Gieseke et al. US 6,187,073 and Lamprecht et al. US 4,872,890.

For claim 1, the Read et al. reference discloses a gas/liquid separator (figure 2, object 10) assembly comprising: (a) a vessel including an outer wall and having a gas flow inlet (figure 2, objects 11, and 19), a gas flow outlet and a lower sump (figure 2, objects 20 and 12); the vessel including a sidewall; the gas flow inlet extending through the sidewall (figure 2, objects 11 and 19); (b) a preseparation assembly comprising a tube sheet structure including: a radially continuous axial shroud (figure 2, object 14) comprising a depending central wall positioned spaced from the vessel outer wall to define a gas flow annulus there between (figure 2, object 14); an annular mounting ring extending between the axial shroud and the vessel sidewall and supporting the axial shroud (figure 2, objects 11 and 35); the tube sheet structure being positioned to separate an enclosed upper region (shroud 14 separates the separator into an upper region and a lower region) from an enclosed lower region; the depending central wall and base generally defining an upper sump; the gas flow inlet being positioned for gas flow into the enclosed lower region and into the gas flow annulus (figure 2, object 19 and 14); and, the gas flow outlet being positioned for gas flow out of the enclosed upper region (figure 2, object 20); and, (c) a mounting space for at least one in-to-out flow separator element in the enclosed upper region surrounded by and spaced from the gas flow inlet by the axial shroud (figure 2, object 16). The reference does not explicitly state

the axial shroud extending along a distance of at least 20%, and not more than 60%, of an axial length of the mounting space for at least one removable and replaceable in-to-out flow separator. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the axial length of the shroud in order to enhance the separation efficiency of the gas inlet flow element (*In re Aller*, 105 USPQ 233). The reference does not disclose the in-to-out flow separator being removable and replaceable and a base having at least one aperture comprising a flow channel there through.

The Gieseke et al. reference discloses the in-to-out flow separator being removable and replaceable (column 2, lines 5-7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Read et al. reference to include the in-to-out flow separator being removable and replaceable (Gieseke et al. column 2, lines 5-7) because this allows for easy maintenance.

The Lamprecht et al. reference discloses a base having at least one aperture comprising a flow channel there through (figure 3, object 24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Read et al. reference to include a base having at least one aperture comprising a flow channel there through (Lamprecht et al. figure 2, object 24) because this provides a pathway for the contaminated air to reach the filter.

For claim 22 the Read et al. reference discloses (a) in-to-out flow separator element positioned within the enclosed upper region (figure 2, object 16). The reference

does not disclose the in-to-out flow separator being removable and replaceable and the flow separator in association with each flow channel in the base of the tube sheet structure.

The Gieseke et al. reference discloses the in-to-out flow separator being removable and replaceable (column 2, lines 5-7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Read et al. reference to include the in-to-out flow separator being removable and replaceable (Gieseke et al. column 2, lines 5-7) because this allows for easy maintenance.

The Lamprecht et al. reference discloses the flow separator in association with each flow channel in the base of the tube sheet structure (figure 2, objects 24 and 22).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Read et al. reference to include the flow separator in association with each flow channel in the base of the tube sheet structure (Lamprecht et al. figure 2, objects 24 and 22) because this provides a pathway for the contaminated air to reach the filter.

For claim 23, the Read et al. reference discloses (a) one in-to-out flow separator element. The reference does not disclose the in-to-out flow separator being removable and replaceable.

The Gieseke et al. reference discloses the in-to-out flow separator being removable and replaceable (column 2, lines 5-7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Read et al. reference to include the in-to-out flow separator being removable and replaceable (Gieseke et al. column 2, lines 5-7) because this allows for easy maintenance.

For claim 24 and 25, the Read et al. reference discloses the in-to out flow separator elements. The reference does not disclose multiple in-to-out flow separator elements and the in-to-out flow separator being removable and replaceable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include multiple in-to-out flow separator elements, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

The Gieseke et al. reference discloses the in-to-out flow separator being removable and replaceable (column 2, lines 5-7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Read et al. reference to include the in-to-out flow separator being removable and replaceable (Gieseke et al. column 2, lines 5-7) because this allows for easy maintenance.

For claims 26 and 27, the Read et al. reference does not explicitly state the axial shroud extends along a distance of at least 35%, and not more than 60%, of the axial length of the mounting space for at least one removable and replaceable separator element, nor the axial shroud extends along a distance of at least 35%, and not more

than 50%, of the axial length of the mounting space for at least one removable and replaceable separator element. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the axial length of the shroud in order to enhance the separation efficiency of the gas inlet flow element (*In re Aller*, 105 USPQ 233).

For claim 28, the Read et al. reference discloses the axial shroud is cylindrical (figure 2, object 14).

For claim 29, the Read et al. reference discloses the gas flow inlet is a radial inlet (figure 2, object 19).

For claim 30, the Read et al. reference discloses the gas flow outlet extends through the outer wall (figure 2, object 20).

For claim 37, the Read et al. reference discloses a gas/liquid separator (figure 2, object 10) assembly comprising: (a) a vessel including an outer wall and having a gas flow inlet (figure 2, objects 11, and 19), a gas flow outlet and a lower sump (figure 2, objects 20 and 12); the vessel including a sidewall; the gas flow inlet extending through the sidewall (figure 2, objects 11 and 19); (b) a preseparation assembly comprising a tube sheet structure including: a radially continuous axial shroud (figure 2, object 14) comprising a depending central wall positioned spaced from the vessel outer wall to define a gas flow annulus there between (figure 2, object 14); an annular mounting ring extending between the axial shroud and the vessel sidewall and supporting the axial shroud (figure 2, objects 11 and 35); the tube sheet structure being positioned to separate an enclosed upper region (shroud 14 separates the separator into an upper



region and a lower region) from an enclosed lower region; the depending central wall and base generally defining an upper sump; the gas flow inlet being positioned for gas flow into the enclosed lower region and into the gas flow annulus (figure 2, object 19 and 14); and, the gas flow outlet being positioned for gas flow out of the enclosed upper region (figure 2, object 20); (c) a mounting space for at least one in-to-out flow separator element in the enclosed upper region surrounded by and spaced from the gas flow inlet by the axial shroud (figure 2, object 16); (a) in-to-out flow separator element positioned within the enclosed upper region (figure 2, object 16), and directing a fluid stream from the inlet (figure 2, object 19): through at least one in-to-out flow separator element (figure 2, object 16); and outwardly through the outlet (figure 2, object 20). The reference does not explicitly state the axial shroud extending along a distance of at least 20%, and not more than 60%, of an axial length of the mounting space for at least one removable and replaceable in-to-out flow separator. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the axial length of the shroud in order to enhance the separation efficiency of the gas inlet flow element (*In re Aller*, 105 USPQ 233). The reference does not disclose the in-to-out flow separator being removable and replaceable, a base having at least one aperture comprising a flow channel there through, the flow separator in association with each flow channel in the base of the tube sheet structure, and the fluid stream flowing beneath a lower edge of an axial shroud.

The Gieseke et al. reference discloses the in-to-out flow separator being removable and replaceable (column 2, lines 5-7).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Read et al. reference to include the in-to-out flow separator being removable and replaceable (Gieseke et al. column 2, lines 5-7) because this allows for easy maintenance.

The Lamprecht et al. reference discloses a base having at least one aperture comprising a flow channel there through, the flow separator in association with each flow channel in the base of the tube sheet structure (figure 3, object 24), and the fluid stream flowing beneath a lower edge of an axial shroud (figure 1, air flow arrows going into object 100).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Read et al. reference to include a base having at least one aperture comprising a flow channel there through and the flow separator in association with each flow channel in the base of the tube sheet structure (Lamprecht et al. figure 2, object 24) and the fluid stream flowing beneath a lower edge of an axial shroud (Lamprecht et al. figure 1, air flow arrows going into object 100) because this provides a pathway for the contaminated air to reach the filter.

***Allowable Subject Matter***

Claims 31-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: "the inlet skirt positioned below the gas flow inlet and extending to the vessel outer wall" could not be found within prior art.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amber Miller-Harris whose telephone number is (571) 270-3149. The examiner can normally be reached on Mon-Thur (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SUPERVISORY PATENT EXAMINER